

3.1 CUMBERLAND RIVER BASIN: BIG SOUTH FORK – BEAR CREEK



DESCRIPTION and EXTENT OF PROBLEM

According to the 1998 303(d) List more than 19 miles of the Big South Fork – Bear Creek watershed is not supporting its designated uses due to sediment loadings and low pH caused by abandoned surface and deep coal mines. Currently, the water of both East and West Branch of Bear Creek are lifeless. Even so, an effort has been underway for ten years to remediate many of these problems. The following explains what has occurred so far and what is planned for the future.

1998 303(d) LIST

WATERSHED NAME

Bear Creek – West Branch
 Bear Creek – East Branch
 North White Oak Creek
 White Oak Creek (incl. Bone Camp, Black Wolf)
 Brimstone Creek
 Straight Fork Creek

SOURCES

abandoned mining
 abandoned mining
 abandoned mining
 abandoned mining
 abandoned mining
 abandoned mining

SUBWATERSHED ROTATIONAL PLAN

Currently, Bear Creek, East and West Branches, are the only watersheds that have been considered as acid mine drainage (AMD) projects in the Big South Fork of the Cumberland watershed. Attention is being focused on addressing AMD issues in the West Branch, while a recently completed 319-reclamation project has addressed AMD issues in East and West Branches.

Of the remaining proposed reclamation sites in West Branch, TDEC-AML, in partnership with TDA-NPS Program, has made a commitment to address roughly half of the remaining AMD sites, while the USDA-NRCS has agreed to address the remaining sites.

When USDA-NRCS meets its commitment, the TDEC/TDA partnership will be completed in the West Branch. At that time, further work in East Branch would be considered. Once all feasible work has been completed in the Bear Creek subwatershed, the TDEC/TDA partnership will address other Big South Fork subwatersheds, until all subwatersheds in the eight-digit HUC area have been restored.

COOPERATING PARTNERS

Partners

City of Oneida
 Kentucky Department of Environmental Protection
 Division of Water-Nonpoint Source Program
 Local landowners
 Scott County government
 Scott County Soil Conservation District
 Tennessee Citizens for Wilderness Planning

Abbreviation

KY-NPS

SCD
 TCWP

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Tennessee Department of Agriculture	
Ag Resources Conservation Fund	TDA-ARC
Division of Forestry	TDA-Forestry
Tennessee Department of Environment & Conservation	
Division of Water Pollution Control	TDEC-WPC
Land Reclamation Section	TDEC-LRS
Tennessee Department of Health	
Division of Lab Services	TDH-DLS
U.S. Department of Agriculture	
Natural Resource Conservation Service	USDA-NRCS
U.S. Department of Interior	
Bureau of Mines	USDI-BM
Fish & Wildlife Service	USDI-F&WS
National Park Service	USDI-NPS
Big South Fork-National River & Recreational Area	BISO
Office of Surface Mining	OSM

City of Oneida

As the City of Oneida continues to grow northward among the many reclaimed and un-reclaimed mine sites of the East and West Branches of Bear Creek, it will need to preserve the effectiveness of the BMPs. Education efforts by the county addressing construction and urban runoff issues will need to be initiated. Landowners of this portion of the city will also need to be aware of the role they play in restricting the pollutants which reach these receiving streams.

KDEP-Division of Water-NPS Program

The Kentucky Division of Water-NPS Program has been quite interested the progress being made in Tennessee towards remediating the many acid mine drainage sites there. Where Bear Creek flows northward into Kentucky monitoring sites have been positioned and water quality samples have been acquired and assessed. The State of Tennessee looks forward to receiving periodic water quality updates from Kentucky as a gauge to the progress being made towards improving water quality in this watershed.

Local landowners

Individual landowners will be requested to participate in the implementation of BMPs by allowing the BMP to be placed on their property, contributing to the construction of the BMP through in-kind services, and maintaining the BMP for a pre-determined or indefinite period of time. These same landowners will also be requested to allow others to visit the BMP once it has been constructed.

Scott County government

As Scott County continues to grow among the many reclaimed and un-reclaimed mine sites of the East and West Branches of Bear Creek it will need to remain aware of the reclamation work having been done there, so that all measures will be taken to preserve these effective BMPs. Education efforts by the county addressing construction and urban runoff issues will need to be initiated. Landowners of this portion of the county will

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also need to be aware of the role they play in restricting the pollutants which reach these receiving streams.

Scott County SCD

The Soil Conservation District is an active partner in the effort to reduce the introduction of sediment loadings and other contaminants to the local receiving streams. Through their capabilities to leverage funding from the 319 Program, the SCD, as a primary state contractor, can provide a significant amount of financial assistance to local water quality remediation efforts. Through its direct interaction with the local NRCS district conservationist, the SCD can also direct technical as well as administrative assistance to local water quality remediation efforts.

The SCD can also serve as a leader in the effort to increase water quality stewardship of local citizens and operators. SCDs are active in the effort to continue water quality correction and reduction efforts long after state and other outside funds have been reduced and/or eliminated.

Tennessee Citizens for Wilderness Planning

Many members of Tennessee Citizens for Wilderness Planning are residents of the Cumberland Mountains and Plateau where all of Tennessee's coal-related AMD problems exist. It is in this groups' best interest to learn more of what is being achieved in the Bear Creek watershed so they can assist in disseminating this information to other groups. By doing so, a heightened awareness could promote the funding for AMD projects for many years to come.

TDEC-WPC-Land Reclamation Section

The TDA-NPS Program will continue to partner with this agency in an effort to correct all AMD sites in the Big South Fork of the Cumberland region as well as all of the other AMD watersheds further to the southwest.

The TDA-NPS Program has entered into a contract to provide 319 funds for the reclamation of roughly half of the AMD sites found in the West Branch of the Bear Creek watershed. Once these sites are reclaimed by TDEC-WPC, this partnership will either address any work remaining in the West Branch or will refocus its efforts towards the East Branch where much work has already been accomplished by the partnership.

USDI-Bureau of Mines

The USDI-Bureau of Mines is a source of reclamation information for the partners to rely upon. Maintaining partnerships between USDI-BM and USDA-NRCS, TDEC-WPC, and TDA-NPS Program will lead to the greatest exchange of information possible.

USDI-National Park Service

The northern half of Big South Fork-National River & Recreational Area (BISO) is positioned downstream of Bear Creek and will benefit from these remediation efforts. Water quality monitoring and public awareness efforts are a part of BISO's existing watershed management plan. By partnering with USDA-NRCS, TDEC-WPC, and TDA-NPS Program, USDI-NPS should be able to provide opportunities for its visitors to learn

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more about what is being accomplished in the Bear Creek watershed, thereby increasing the probability of future remediation project funding.

USDI-Office of Surface Mining

USDI-OSM has always been interested in the success of AMD remediation/reclamation efforts. From these efforts, new technologies and attitudes are achieved to be used in its active mine regulatory programs throughout the nation. A healthy partnering environment between USDI-OSM and USDA-NRCS, TDEC-WPC, and TDA-NPS Program should lead to the greatest exchange of information possible.

CURRENT 319 PROJECTS

The following is a listing of what 319 projects are currently addressing water quality issues in Big South Fork – Bear Creek – East and West Branch subwatersheds.

Grant Yr.	Project Title	Partner
FY-93	AMD Remediation in BSF-Bear Creek	TDEC-WPC-LRS
FY-99	NPS water quality monitoring/assessment	TDEC-WPC
FY-99(UWA)	BSF-Bear Creek-West Branch AMD Remediation	TDEC-WPC-LRS
FY-99(UWA)	BSF-Bear Creek-West Branch pre-BMP monitoring	TDH-DLS

CURRENT MONITORING & ASSESSMENT

TDEC-WPC five-year watershed management approach
TDH-DLS pre- and post- BMP monitoring

MEASURES OF SUCCESS

- UWA projects have been implemented in all subwatersheds on the 1998 303(d) List in increasing numbers each year.
- Post BMP implementation monitoring results are indicating an overall improvement of the water quality of streams.
- The subwatersheds have been removed from the 1998 303(d) List due to sufficient water quality improvements.
- Plans have been developed to address the remaining 303(d) listed AMD watersheds in the Big South Fork watershed.

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MILESTONES

Long Term Goal 1.

Hold regularly scheduled meetings with stakeholders, to create new partnerships, strengthen existing partnerships and to foster greater trust, commitment and accountability.

- **Action:** Conduct an annual priority watershed partners meeting for project coordination.
Lead: TDA-NPS Program
Key Partners: TDEC-WPC; USDA-NRCS; TDH-DLS; USDI-BISO; local governments
Year(s): 2001-2005
- **Action:** Develop a Watershed Restoration Action Strategy.
Lead: TDA-NPS Program
Key Partners: TDEC-WPC; USDA-NRCS; TDEC-DWS-GWMS
Year(s): 2001

Long Term Goal 3.

Restore all waters impaired by nonpoint sources that are listed on the 1998 303(d) List to the condition of fully supporting their designated uses by 2015, in cooperation with local, state and federal partners.

- **Action:** All of the 1999 UWA AMD sites in the Big South Fork – Bear Creek – East and West Branch subwatersheds will be remediated.
Lead: TDEC-WPC and USDA-NRCS
Key Partner: TDA-NPS Program
Year(s): 2005
- **Action:** Forty percent of the remaining surface and subsurface AMD sites in the Big South Fork – Bear Creek - East Branch subwatershed will be remediated.
Lead: TDEC-WPC and USDA-NRCS
Key Partner: TDA-NPS Program
Year(s): 2010
- **Action:** Water quality of the Big South Fork – Bear Creek - West Branch subwatershed will indicate improvement due to the BMP implementation efforts.
Lead: TDEC-WPC and TDH-DLS
Key Partners: TDA-NPS Program
Year(s): 2005
- **Action:** Water quality of Big South Fork – Bear Creek – East Branch subwatershed will indicate improvement due to the BMP implementation efforts.

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Lead: TDEC-WPC and TDH-DLS
Key Partners: TDA-NPS Program
Year(s): 2010

Long Term Goal 5.

Improve the knowledge of stakeholders and citizens concerning the origins, magnitude, and prevention of nonpoint source pollution.

- **Action:** Develop at least two educational projects to educate the local citizens, landowners, and elected officials in the Big South Fork – Bear Creek subwatershed.

Lead: TDA-NPS Program
Key Partner: TDEC-WPC; USDA-NRCS and UDSI-BISO
Year(s): 2005

Long Term Goal 7.

Use the maximum allowable percentage of funding annually to assist partners with water quality monitoring and assessment, for the duration of the 319 program.

- **Action:** Pre-BMP implementation monitoring will have been completed and post-BMP implementation monitoring will be in progress in the Big South Fork – Bear Creek – West Branch subwatershed.

Lead: TDEC-WPC and TDH-DLS
Key Partners: TDA-NPS Program, USDA-NRCS
Year(s): 2005
- **Action:** Post-BMP implementation monitoring will have been completed in the Big South Fork – Bear Creek – West Branch subwatershed.

Lead: TDEC-WPC and TDH-DLS
Key Partners: TDA-NPS Program, USDA-NRCS
Year(s): 2010
- **Action:** Pre-BMP implementation monitoring will have been completed in the Big South Fork – Bear Creek – East Branch subwatershed.

Lead: TDEC-WPC and TDH-DLS
Key Partners: TDA-NPS Program, USDA-NRCS
Year(s): 2010